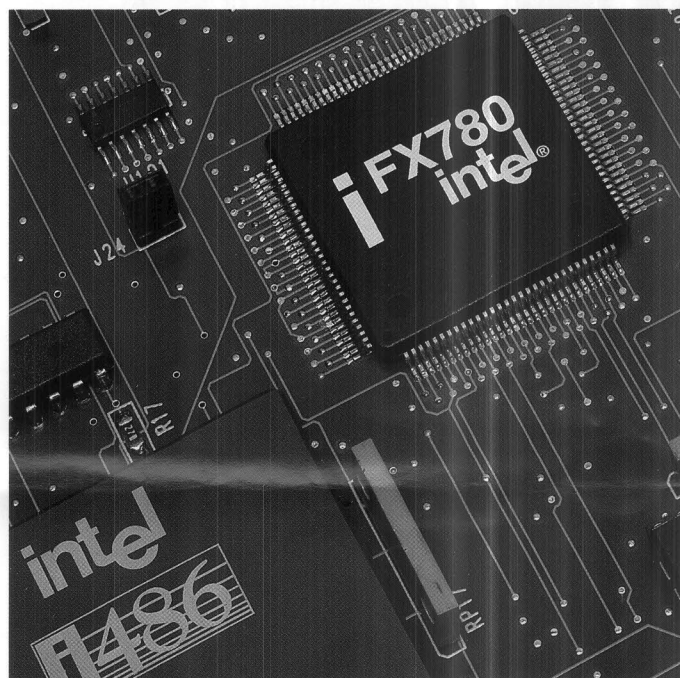


FLEXlogic iFX780

Designers have adopted Field Programmable Gate Arrays (FPGAs) to speed their products to market. Yet early FPGAs introduced new development problems, including complex new design tools, lengthy routing, uncertain timing and time-consuming device simulation. Intel's FLEXlogic family solves these problems.

Intel's iFX780 is the industry's most flexible FPGA and the first member of the FLEXlogic family. The iFX780 combines the speed and ease-of-use of a PLD with the logic and density of an FPGA to give you the greatest design flexibility available.



Product Highlights

- Predictable 10 ns pin-to-pin delays
- 80 MHz system clock frequencies
- 15 ns SRAM
- 5,000 equivalent logic gates or 10,240 bits of SRAM
- Power management minimizes active power consumption (1.5 mA per MHz)
- 80 macrocells arranged in eight Configurable Function Blocks
- 100 percent connectable global routing matrix
- Fast 12-bit identity compare option
- In-system reconfigurable and programmable
- Selectable 3.3V or 5V I/Os
- 12 flexible clocking options
- Supports the JTAG 1149.1 boundary scan standard
- Available in 132-pin PQFP or 84-pin PLCC packages
- Supported by industry standard design and programming tools

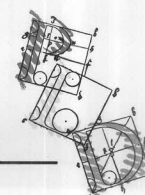
Product Description

The iFX780's flexible architecture contains 80 macrocells arranged in eight Configurable Function Blocks (CFBs). You can use each CFB as either a block of 10 ns 24V10-like logic or as a block of 15 ns 128X10 SRAM.

To maximize fit and resource utilization, the Intel iFX780's flexible macrocells can allocate product terms without losing the donor macrocell as a resource or incurring additional delay. The device also features an on-chip 10 ns 12-bit identity comparator for each CFB.

The Intel iFX780 offers you 12 clock options with a variety of setup and clock-to-output timings that can be adjusted to meet your application needs. The iFX780 delivers unmatched speed, with 10 ns pin-to-pin delays, even when implementing 16 product term equations. I/O pins can be configured as either 3.3V or 5V, allowing the device to serve as a bridge between subsystems of different voltages. With CFBs configurable as SRAM, you gain even more design flexibility. You don't have to include additional devices when you need memory.

Early FPGA products provided *either* in-system reconfiguration *or* on-chip non-volatile logic configuration storage. The Intel



iFX780 provides *both*. In-system reconfiguration offers design flexibility during prototyping, allowing you to endlessly test circuit design versions via its JTAG serial link.

Chances are, you can use the iFX780 with design tools you already know and use. Unlike other FPGA products which are

limited to their own proprietary design tools, the iFX780 is supported by third-party industry standard design entry/programming environments as well as Intel's PLDshell Plus development software. A copy of Intel's PLDshell Plus is available free of charge upon request from Intel Lit# 610948.

Features	Benefits
— 10 ns, at 80MHz registered performance	— Predictable performance
	— Ease of design
— Flexible clocking options	— Ability to customize timing to your application
— Low power consumption	— Runs cool
	— Increases system reliability
— CFBs configurable as 15 ns SRAM	— Increased design flexibility
	— Offers memory or logic in one device
— Reconfigurable	— Reusable during prototyping
	— Can alter in-system
— Built-in CFB comparator	— Provides 12-bit identity comparisons with speed and efficiency
— Industry standard JTAG testing	— Simplifies board level testing
— Free PLDshell Plus development software	— Enables no-risk evaluation
— Third-party industry standard tool support	— Design with familiar tools

Packaging

132-pin PQFP or 84-pin PLCC



Package Options

Pins	Package	Macrocells	I/O	Inputs	Clocks	JTAG/VPP	VCC	GND
84	PLCC	80	60	0	2	5	8	9
132	PQFP	80	80	22	2	5	10	13